

producing a gallium nitride-based compound semiconductor layer doped with a p-type impurity;

producing a catalyst layer comprising a metal, alloy or compound on said gallium nitride-compound semiconductor layer;

annealing the gallium nitride-based compound semiconductor layer fixed with said catalyst layer in an atmosphere gas containing no oxygen;

stripping said catalyst layer completely; and

providing a p-side electrode on said p-type layer after annealing.